

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

**(19) World Intellectual Property Organization
International Bureau**



(43) International Publication Date
22 January 2004 (22.01.2004)

PCT

(10) International Publication Number
WO 2004/008261 A3

(51) International Patent Classification⁷: G05B 19/042, H04B 7/00, G05B 15/02, H02J 9/00

(21) International Application Number: PCT/GB2003/003006

(22) International Filing Date: 10 July 2003 (10.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

0215924.2	10 July 2002 (10.07.2002)	GB
0304748.7	1 March 2003 (01.03.2003)	GB
0306095.1	18 March 2003 (18.03.2003)	GB

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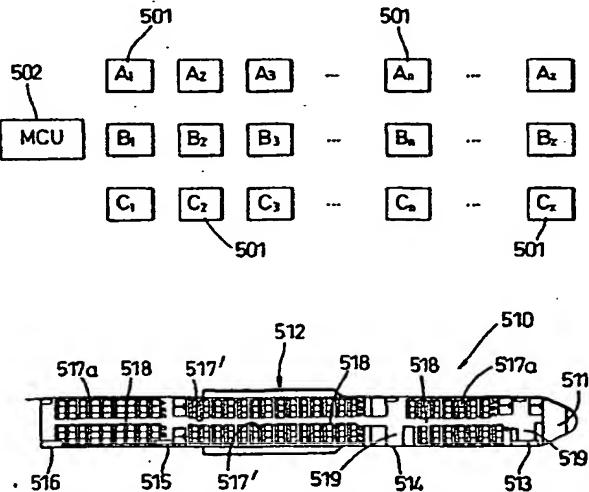
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(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: IMPROVEMENTS IN OR RELATING TO NETWORKED COMMUNICATION DEVICES



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(57) **Abstract:** An aircraft emergency lighting system comprises a plurality of light units (501) arranged to guide passengers to and to identify exits (513, 514, 515, 516) in an emergency. The light units (501) communicate wirelessly with a remote master control unit (502) operable from the cockpit (511) using a low power spread spectrum signal centred on a single frequency to avoid interference with onboard aircraft control and communication systems. The light units (501) are arranged to receive and transmit any signal to and from the master controller (502) whereby only some of the light units (501) need be within range of the master controller (502). The light units (501) comprise battery operated LEDs and cycle between an inoperable (sleep) condition and an operable (awake) condition to conserve power consumption and extend battery life.



Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:

8 April 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 03/03006

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G05B19/042 H04B7/00 G05B15/02 H02J9/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G05B H04B H02J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, COMPENDEX, INSPEC, IBM-TDB

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2001/055965 A1 (RENALDI PAT ET AL) 27 December 2001 (2001-12-27) paragraph '0123! paragraph '0145! - paragraph '0147! paragraph '0212! - paragraph '0216!	1,2,23
Y	US 2002/044042 A1 (KNUDSEN JESPER ET AL) 18 April 2002 (2002-04-18) abstract; claim 1	3-7
X	US 5 907 491 A (CANADA RONALD G ET AL) 25 May 1999 (1999-05-25) the whole document	3-7
	—	1,14,15, 17
	—/—	

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the International filing date
- "L" document which may throw doubts on priority, claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the International filing date but later than the priority date claimed

- "T" later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "Z" document member of the same patent family

Date of the actual completion of the International search

27 January 2004

Date of mailing of the International search report

09.02.04

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 03/03006

C(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/080027 A1 (CONLEY WILLIAM H) 27 June 2002 (2002-06-27) paragraph '0001! - paragraph '0017! paragraph '0033! - paragraph '0037! paragraph '0043!; figure 1	1,20-23
A	HARMAN R M: "Wireless solutions for aircraft condition based maintenance systems" 2002 IEEE AEROSPACE CONFERENCE PROCEEDINGS, vol. 6, 9 - 16 March 2002, pages 2877-2886, XP010604856 Big Sky, MT, USA ISBN 0-7803-7231-X the whole document	1,14
A	DE 41 34 034 A (TELEFUNKEN SYSTEMTECHNIK) 16 July 1992 (1992-07-16) the whole document	1,14
A	ALENA R ET AL: "Modeling a wireless network for international space station" IEEE AEROSPACE CONFERENCE PROCEEDINGS 2000, vol. 11, 18 - 25 March 2000, pages 223-228, XP010518477 * Section 1. INTRODUCTION * * Section 2. WIRELESS NETWORK ARCHITECTURE ON THE ISS *	1
A	J. HAARTSEN: "BLUETOOTH - The universal radio interface for ad hoc, wireless connectivity" ERICSSON REVIEW, 'Online' no. 3, 1998, pages 110-117, XP000783249 Retrieved from the Internet: <URL: http://www.ericsson.com/about/publications/review/1998_03/14.shtml > 'retrieved on 2003-10-31! the whole document	1

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB 03/03006

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
inventions 1, 3, 4 and 5

4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1, 2, 3 and 23,
and all other claims when directly or indirectly depending on claims 2, 3 or 23

A communication protocol for a system comprising a plurality of networked devices arranged to communicate wirelessly with a master controller using spread spectrum communication.

2. Claims: 8 when directly depending on claim 1,
and succeeding claims when directly or indirectly depending on claim 8

A system comprising a plurality of networked devices arranged to communicate wirelessly with a master controller, whereby each device is autonomously powered.

3. Claims: 14 when directly depending on claim 1,
and succeeding claims when directly or indirectly depending on claim 14

A system comprising a plurality of networked devices arranged to communicate wirelessly with a master controller, whereby the devices have distinct operation modes for energy saving purposes.

4. Claims: 20 when directly depending on claim 1,
and succeeding claims when directly or indirectly depending on claim 20

A system comprising a plurality of networked devices arranged to communicate wirelessly with a master controller, whereby the master controller interrogates the networked devices to get their address.

5. Claims: 22 when directly depending on claim 1,
and succeeding claims when directly or indirectly depending on claim 22

A system comprising a plurality of networked devices arranged to communicate wirelessly with a master controller, which carries out diagnostics through a test signal.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

6. Claims: 24 when directly depending on claim 1,
and succeeding claims when directly or indirectly
depending on claim 24; and claims 35 and 36

The use of a system comprising a plurality of networked
devices arranged to communicate wirelessly with a master
controller in an emergency lighting system.

7. Claims: 31 when directly depending on claim 1,
and succeeding claims when directly or indirectly
depending on claim 31

A system comprising a plurality of networked devices
arranged to communicate wirelessly with multiple master
controllers.

8. Claim : 34 when directly depending on claim 1

A system comprising a plurality of networked devices
arranged to communicate wirelessly with a master controller,
whereby the master controller is operated manually.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/GB 03/03006

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 2001055965	A1	27-12-2001	AU WO	3067599 A 9945445 A1	20-09-1999 10-09-1999
US 2002044042	A1	18-04-2002	AT AU AU AU CA CA DE WO WO EP EP JP NO US	255733 T 759777 B2 4828801 A 4828901 A 2391405 A1 2441642 A1 60101388 D1 0177764 A2 0178307 A2 1290506 A2 1275037 A2 2003530741 T 20020448 A 2002047774 A1	15-12-2003 01-05-2003 23-10-2001 23-10-2001 18-10-2001 18-10-2001 15-01-2004 18-10-2001 18-10-2001 12-03-2003 15-01-2003 14-10-2003 10-12-2002 25-04-2002
US 5907491	A	25-05-1999	US EP US WO DE EP WO	5854994 A 1023662 A1 6301514 B1 9845779 A1 932890 T1 0932890 A1 9810393 A1	29-12-1998 02-08-2000 09-10-2001 15-10-1998 09-03-2000 04-08-1999 12-03-1998
US 2002080027	A1	27-06-2002	NONE		
DE 4134034	A	16-07-1992	DE	4134034 A1	16-07-1992